



# Height Modernization Activities

JULY 2000

NGS height modernization activities are designed to improve the vertical portion of the National Spatial Reference System by using Global Positioning System (GPS) surveying to determine heights. These activities include studies to improve geometric heights and geoid heights, regardless of whether the data are collected by a stationary or a moving receiver. These improvements are expected to provide:

- significant time savings in field surveying,
- improved navigation and transportation systems,
- more efficient fertilizer and pesticide use, resulting in reduced pollution,
- more accurate storm surge and pollution modeling, and
- improved infrastructure monitoring.

At the request of Congress, NGS studied the usefulness of GPS surveying methods to provide accurate, consistent, and accessible heights. As part of the study, NGS sponsored two user forums to obtain the recommendations of state and local governments, the private sector, and others to evaluate the technical, financial, legal, and economic aspects of using GPS to modernize the national height system. The forums provided opportunities to explore current and potential applications of GPS height technology, and to demonstrate the technology's utility and worth.

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U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Service  
National Geodetic Survey

The National Geodetic Survey (NGS) defines and manages the National Spatial Reference System, which determines position, height, distance, direction, gravity, and shoreline throughout the United States. Since 1807 NGS and its predecessor agencies have led the world in precise positioning and developed emerging technologies for the public. NGS provides its expertise and a wealth of free information, including direct access to its data base, on the World Wide Web at: [www.ngs.noaa.gov](http://www.ngs.noaa.gov)



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